CHARGE NUMBER : 1801

PROJECT TITLE : Expanded Tobacco Development

PERIOD COVERED: September 1-30, 1985

PROJECT LEADER: G. Gellatly

I. CONVEYOR REORDERING

A. Objective

To minimize DIET filler breakage and filling power loss during reordering.

B. Status

It has been established that conveyor reordering of DIET can be achieved in about one minute without longs loss and no additional filling power loss than present cylinder reordering. This concept greatly reduces the number of conveyors required for reordering for a production facility.

Two stage reordered product was evaluated in 100% cigarettes and 30% in DBC bright cigarettes. The longer test product was shown to survive cigarette making and improve cigarette quality. Loose ends and coal drop-off of the 100% product cigarettes showed significant improvement but these parameters were not discernible in 30% cigarettes. There was no change in cigarette weight at the same firmness.

C. Plans

1. Compare the longer product of single stage conveyor reordering product with cylinder reordered product of the same filling power to confirm the results of the two stage conveyor reordered product.

2. Develop design data to support the installation of a production test facility at Cabarrus of single stage conveyor reordering.

II. UNFOLDED STRIP

A. Objective

To evaluate processing and structural characteristics of unfolded strip for improved filler length and cigarette quality.

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B. Status

Two bright strip grades (G-55 & O-9) were followed through conventional stemmery and primary processing. Decrease in strip size and the location where that decrease takes place was seen to be grade related. G-55 suffered no decrease of 1" sieve fraction during stemmery drying but lost nearly 10% during casing in the primary. Grade O-9 lost 11% of 1" sieve fraction during conventional stemmery drying but suffered no loss during primary casing. The same degree of unfolding of O-9 strip occurred in product samples taken before drying, after drying, and after stemmery prizing. Unfolding of cased strip prior to cutting appears to be the most promising application point of this as there is much less risk of recurling or refolding.

Trials to unfold strip were made on static screen attached to the 3" tower steam supply to determine if the non-tower strip unfolding is feasible (250-500°F). DBC bright strip at 18-25% OV unfolded easily at temperatures between 400-500°F providing that the superheated steam flow was sufficient to fluidize the strip. Multilayer processing of strip without fluidization severely impeded strip unfolding.

C. Plans

1. Modify the static screen to allow for more precise study of conditions required for optimum strip unfolding.

2. Determine if the Hauni tunnel, Hambro and ADT dryer and fluidized bed dryers can be used for strip unfolding and if they can be modified to use superheated steam at 400°F.

3. Determine if filler from unfolded strip can improve the quality of DIET product.

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